

**REMARKS**

Claims 1-20 are all the claims pending in the application.

**I. Response to Rejection of Claims 2-3, 5-6, 8-9 and 11-12 under 35 U.S.C. § 103(a)**

Claims 2-3, 5-6, 8-9, and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hess et al (US 6,716,629 B2) in view of Clark et al (US 5,358,691).

Applicant respectfully traverses the rejection.

Basically, the Examiner cites Hess as teaching a platen (biochemical analysis unit; base plate) with an array of through-holes traversing the platen, that the through-holes having a three-dimensional hydrophilic scaffold placed therein (*i.e.*, porous adsorptive regions comprising holes filled with a porous material), and that the scaffold is activated to couple biological materials within the holes (*i.e.*, bound receptors). *See* col. 13, line 65 to col. 14, line 3; and col. 20, lines 45-62. In addition, Hess is cited as teaching that platen can be used to screen for ligands by affinity (*i.e.*, performing a specific binding detection process) by performing the step of applying pressure across the platen to create a flow of sample through the array of through-holes, where the sample is a second set of reagents that can react with reagents already loaded into the through-holes (*i.e.*, forcibly causing a ligand to flow through the holes; ligand subject to specific binding with bound receptors). *See* col. 35, lines 32-42; and col. 28, lines 16-22. Furthermore, Hess is cited as teaching detecting the receptor by the utilization of a labeling substance. *See* col. 55, line 64 to col. 56, line 7.

The Examiner acknowledges that Hess fails to teach the step of performing a bubble removing or dissolving process during the flowing of the liquid. To make up for the deficiencies of Hess, Clark is cited as teaching a step of automatically flushing bubbles out

of a fluidics system in order to prevent the presence of air bubbles from affecting the precision and accuracy of the dispenser. *See* col. 21, lines 7-48. Accordingly, the Examiner takes the position that it would have been obvious to one of ordinary skill in the art to modify the method of Hess with the step of automatically flushing bubbles out of the fluidics system.

Applicant respectfully disagrees, and submits that there is no motivation to combine Hess and Clark.

Independent claims 2 and 3 recite a liquid being forcibly caused to flow, such that the liquid flows through each of the holes of the biochemical analysis unit, during the specific binding detecting process, wherein bubble removing/dissolving process for removing/dissolving bubbles, which are present in the liquid, is performed during the flowing of the liquid. Therefore, in the present invention, a reaction liquid is forcibly caused to flow through each of the holes of the biochemical analysis unit while bubbles are removed or dissolved. As the Examiner recognizes, Hess does not disclose the removal or dissolution of bubbles during the flow of liquid.

The disclosure of Clark relied upon by the Examiner relates to the flushing of bubbles formed inside a syringe. Specifically, Clark discloses, at column 21, lines 7-19 (emphasis added), that:

Various elements of syringe 122 which provides automatic bubble flushing and fluids to the various pipetting mechanisms is provided in various views in FIGS. 9, 9A and 9B. The ability of diagnostic instrumentation to accurately perform an assay is critically dependent on the precision and accuracy with which syringes, i.e. pipetting, can aspirate and dispense reagents and samples. ***The precision and accuracy of a syringe is severely degraded by the presence of small air bubbles inside a syringe.*** Bubbles, unfortunately, are all too common and are difficult to remove or avoid. ***Syringe 122 avoids these problems by automatically flushing bubbles completely out of the fluidics system.***

Then, Clark continues to discuss the structure of the syringe that flushes the bubbles at column 21, lines 19-48. Therefore, Clark aims at removing bubbles that are formed in a syringe.

The disclosure of Hess relied upon by the Examiner as teaching forcibly causing a ligand to flow through the holes and subject the ligand to specific binding with the bound receptors is column 28, lines 16-22. Specifically, the disclose states:

The array can also be loaded by applying a pressure across the platen, thereby causing a dilute solution of reagent and/or sample to flow through the array of through-holes.

Hess does not disclose that bubbles are formed during the application of pressure or any problems associated with the formation of bubbles. In addition, the disclosure relied upon by the Examiner relates to the application of pressure and not to the use of a syringe. Therefore, one of ordinary skill in the art would not expect, based on the disclosure of Clark, that the application of pressure would cause the bubble formation or problems associated therewith. Accordingly, there is no motivation that would lead one of ordinary skill in the art to modify the process of Hess to remove bubbles based on the disclosure of Clark to arrive at the claimed invention.

Moreover, the purpose of removing the bubbles in Clark is to achieve uniform delivery from a syringe. In contrast, the purpose of removing bubbles in the present invention is to achieve uniform progression of reactions, since the reactions do not process at regions to which bubbles cling. Thus, the purpose of removing bubbles are different between the present invention and Clark.

For the above reasons, it is respectfully submitted that a *prima facie* case of obviousness has not been established.

Accordingly, reconsideration and withdrawal of the foregoing rejection is respectfully requested.

**II. Conclusion**

For the foregoing reasons, reconsideration and allowance of claims 1-20 is respectfully requested.

If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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